# NOx Rule Q & A

## ■ Questions about NOx? Here are some answers:

### What is the NOx Rule?

The NOx Rule is a rule adopted by the Indiana Air Pollution Control Board in June 2001. It requires certain industries to reduce their emissions of NOx starting in 2004. The rule applies to electric generating facilities, large industrial boilers and cement kilns. It requires these reductions each year from May through September, starting in 2004. These summer months of hot and sunny weather cause emissions of NOx and other pollutants to form ground level ozone, or smog.

### What is NOx?

"NOx" stands for *nitrogen oxides*, a family of chemical compounds that are produced as a byproduct of combustion. NOx is emitted by motor vehicles, industries that use boilers to produce heat or steam (electric utilities, steel mills, and other types of operations), and smaller sources, such as small furnaces. It is one of the main chemical ingredients of smog.

### What sources are regulated by the rule?

The NOx rule applies to three types of industrial operation: electric utility boilers larger than 25 megawatts (of which there are 94 in Indiana at 27 utility plants); large industrial boilers with capacity greater than 250,000,000 BTU/hour (of which there are 52 units at 10 plants) and cement kilns (of which there are 8 kilns at 4 plants).

### What are the expected environmental results of the rule?

By 2007, the rule will result in substantially lower NOx emissions (31%) in Indiana. Without this rule in place, 2007 statewide NOx emissions are predicted to be 340,000 tons during the ozone season. With this rule, they are predicted to be 234,000 tons. For utilities, the rule requires an 85% reduction from their 1990 emission levels. For industrial boilers, the reduction is 60%; and for cement kilns, the reduction is 30%.

### What are the health benefits expected for Hoosiers?

Summertime ozone affects Hoosiers all across the state, especially children, the elderly and those who have a respiratory illness already, such as asthma. When ozone levels approach or exceed safe levels determined by USEPA, IDEM urges sensitive people to consider limiting their outdoor activity. NOx is one of the two major pollutants that help to form ozone, so when NOx emissions go down as a result of this rule, ozone levels will go down as well. Industry in neighboring states will also be requiring this type of NOx reduction, which will also help ozone levels within Indiana.

### What is the cost to industry with the adoption of this rule?

It is very difficult to predict accurately the expected costs of a rule like this, and environmental requirements have often turned out to be cheaper to implement than industry and regulators predicted. IDEM's estimates of the range of costs to industry are as follows:

*Electric utilities: $2,291 per ton of NOx reduced*
*Industrial boilers: $1,321 to $1,940 per ton of NOx reduced*
*Cement kilns: $760 to $1,228 per ton of NOx reduced*

There are several elements in the rule that are designed to help companies find the cheapest way to comply. The most significant of these is a regional trading program. If one company reduces more NOx than is required under the rule, it can sell or trade those "extra" reductions to another company for whom it would be more expensive to install controls.

### What increase in electric bills can Hoosiers expect to see and when?

The State Utility Forecasting Group at Purdue University did a study to determine the impact on residential, commercial and industrial electric rates as a result of this rule. That study concluded that electric rates could be expected to increase by 6-7% ($.0033 per kilowatt hour). For example, a typical monthly residential bill for 500 kilowatt hours could increase by $1.65.

## How does this rule differ from current rules to regulate nitrogen oxide emissions?

Currently, utilities are required to make some NOx reductions as part of the Acid Rain program, which was enacted in 1990. The reductions required by the current rule are far greater than what is required under the Acid Rain program. Certain industries are also required to meet NOx emission limits under other existing state or federal rules, but those rules generally apply only to newly constructed plants. This NOx rule applies to all existing facilities as well as ones that may be built in the future.

## Please explain the elements of the cap and trade allowance program?

IDEM will assign to each facility participating in the cap and trade allowance program a specific number of "allowances." For each allowance that a company holds, it may emit one ton of NOx during the ozone season, beginning in 2004. Each company will have an account, similar to a bank account, where it will hold its allowances. It may buy, sell or trade as many allowances as it wishes, but in October of each year, there must be at least as many allowances in its bank account as tons of NOx it emitted during the previous ozone season. Sophisticated monitors on each smokestack will keep track of exactly how much NOx is emitted. If a company doesn't use all its allowances one year, it may save them for future years.

## How will this rule impact the prospect of new development in Indiana?

Economic development should not be impacted by this rule. All the states surrounding Indiana are developing similar rules, so there will be an even playing field for industry.

## How does the rule encourage energy efficiency and clean energy?

The rule sets aside 2% of the allowances available for trading to be assigned to sponsors of projects implementing highly efficient methods of generating electricity, projects that reduce the demand for electricity, and projects that use renewable energy sources, such as solar and wind power. Indiana is the only state in the midwest region to include this progressive provision in its rule.

## Will the rule lead to power shortages, as have occurred in California?

There is no reason to think that this rule will lead to power shortages. The situation in California is due to many factors not present in Indiana, primarily the deregulation of the utility industry. There are many new power plants now under construction in Indiana or proposed for construction in the next few years that should ensure an adequate power supply.

## What are other states doing?

All 22 states covered by U.S. EPA's requirement to adopt NOx rules have either completed their rules or are working on them. All the other states' rules meet the same basic requirements as Indiana's rules and will result in comparable NOx reductions.

## Are we just doing this to help the northeast states?

No. These rules, combined with those in neighboring states, will improve air quality right here in Indiana. A number of areas in Indiana are affected by high emissions from power plants, many of which are located along the Ohio River. Reductions in emissions from those plants will certainly improve air quality in areas of Indiana where it can be unhealthy on summer days when ozone levels are high.

## Are there any particular benefits or unique features of Indiana's rule?

Yes, several. A number of elements of the rule are designed to keep costs as low as possible, while still achieving the environmental goal. The cap and trade program is the key feature. It will have the effect of lowering and leveling costs across the industry by allowing sources who can control relatively cheaply to do so, because they will be able to sell excess reduction credits to companies who would have to pay more to install controls themselves. This is the first time an Indiana rule has included this kind of market-based, cap and trade program. The setaside for energy efficiency and renewable energy projects is a very progressive feature of the rule. It provides a clear incentive for the development of these types of projects, which is good public policy from several perspectives. Energy efficiency and clean energy projects result in less air pollution not just from NOx, but from other emissions such as SO2, CO2 and mercury. They also help diversify Indiana's energy supply. Furthermore, by excluding certain industrial boilers from the trading program and requiring them to meet strict emission and fuel guidelines, the rule reduced control costs for this sector from $39M to $11M.